What Is Claimed Is:

1   1. A device for accurately generating a plurality of samples representing data encoded

2   according to a digital subscriber line (DSL) specification, said data being encoded in a DSL

3   signal and being received on a telephone line, said telephone line being shared by other devices

4   used for home networking, said device comprising:

5   a filter coupled to said telephone line, said filter receiving an input signal on said

6   telephone line and attenuating signal components corresponding to said home networking to

7   generate a filtered output;

8   a first amplifier amplifying said filtered output to generate an amplified signal; and

9   an analog to digital converter (ADC) sampling said amplified signal to generate said

10   plurality of samples.

1   2. The device of claim 1, wherein said filter comprises:

2   a high pass filter filtering any DSL transmission echos received on said telephone line,

3   said high pass filter further filtering any voice communications also received on said telephone

4   line;

5   a second amplifier amplifying the output of said high pass filter; and

6   a low pass filter filtering attenuating the signal components corresponding to said home

7   networking to a level less than a desired noise floor in an environment based on said DSL.

1   3. The device of claim 2, wherein said high pass filter further attenuates high frequency

2   components including said signal components corresponding to said home networking, wherein

3   the attenuations of said high frequency components enables said second amplifier to be

4   implemented with a higher gain.

1   4. The device of claim 3, wherein said DSL comprises Asymmetric DSL (ADSL), and

2   said home networking is performed according to home phone networking alliance (HPNA)

3   standard, wherein said desired noise floor equals -150 dBM/Hz.

1   5. The device of claim 3, wherein said high pass filter comprises a first resistor in series

2   with an input capacitance, wherein said first resistor has a resistance substantially more than the

3   internal resistance of said input capacitance, wherein said first resistor causes said attenuations

4   of said high frequency components.

1   6. The device of claim 5, further comprising a second resistor in series with another stage

2   contained in said high pass filter.

1   7. The device of claim 3, further comprising an equalizer disposed between said high

2   pass filter and said low pass filter, said equalizer compensating for the different attenuations to

3   which different frequency signal components of said ADSL signal are subjected to when

4   transmitted on a local loop.

1   8. The device of claim 1, wherein said filter is implemented as an analog filter.

1   9. The device of claim 8, wherein said analog filter is implemented using active

2   components.

1   10. The device of claim 8, wherein said analog filter is implemented using passive

2   components.

1   11. The invention of claim 1, wherein said device comprises a modem or a customer

2   premises equipment (CPE).

1   12. The device of claim 2, wherein said filter is implemented as a monolithic integrated

2   circuit.

1   13. A filter for processing a signal received on a telephone line, said telephone line being

2   shared by a customer premise equipment (CPE) operating according to a digital subscriber line

3   (DSL) standard, said telephone line being shared by other devices used for home networking,

4   said filter comprising:

5   a high pass filter filtering any DSL transmission echos received on said telephone line,

6   said high pass filter further filtering any voice communications also received on said telephone

7   line;

8   an amplifier amplifying the output of said high pass filter; and

9   a low pass filter attenuating the signal components corresponding to said home

10   networking to a level less than a desired noise floor.

1   14. The filter of claim 13, wherein said high pass filter further attenuates high frequency

2   components including said signal components corresponding to said home networking, wherein

3   the attenuations of said high frequency components enables said amplifier to be implemented

4   with a higher gain.

1   15. The filter of claim 14, wherein said DSL comprises Asymmetric DSL (ADSL), and

2   said home networking is performed according to home phone networking alliance (HPNA)

3   standard, wherein said desired noise floor equals -150 dBM/Hz.

1   16. The filter of claim 14, wherein said high pass filter comprises a first resistor in series

2   with an input capacitance, wherein said first resistor has a resistance substantially more than the

3   internal resistance of said input capacitance, wherein said first resistor causes said attenuations

4   of said high frequency components.

1   17. The filter of claim 16, further comprising a second resistor in series with another

2   stage contained in said high pass filter.

1   18. The filter of claim 13, wherein said high pass filter, said amplifier and said low pass

2   filter are implemented in a monolithic integrated circuit.

1   19. A device for accurately generating a plurality of samples representing data encoded

2   according to a digital subscriber line (DSL) specification, said data being encoded in a DSL

3   signal and being received on a telephone line, said telephone line being shared by other devices

4   used for home networking, said device comprising:

5   filtering means for attenuating signal components corresponding to said home networking

6   to generate a filtered output, said signal components being received on an input signal, said input

7   signal further containing a component according to said DSL specification, said filtered output

8   containing said component according to said DSL specification;

9   amplifier means for amplifying said filtered output to generate an amplified signal; and

10   converter means for generating said plurality of samples by sampling said amplified

11   signal.